

AMENDMENTS TO THE CLAIMS

Please amend Claims 1-4, 11-12, 21-22, and 24 and add Claims 32-34 as follows:

1. (Currently Amended) A method for performing echo cancellation within a switching center of a communication network, said switching center being coupled to a plurality of local user devices and a plurality of external transmission media, said method comprising the steps of:

5           (a) providing a pool of echo cancellation units within said switching center;

          (b) coupling a first local user device to a first external transmission medium as part of a communication connection between the first local user device and a remote user device;

          (c) monitoring the first external transmission medium for at least one of echo cancellation activity and echo energy during the communication connection between the first  
10       local user device and the remote user device;

B           when (d) in response to the detected at least one of echo cancellation activity and echo energy ~~[[is]]~~ being above a determined threshold, allocating a first echo cancellation unit from the pool of echo cancellation units to the communication connection; ~~[[and]]~~

          when (e) in response to the detected at least one of echo cancellation activity and  
15       echo energy thereafter ~~falls~~ falling below the determined threshold, discontinuing the allocation of the first echo cancellation unit to the communication connection;

(f) thereafter monitoring the first external transmission medium for at least one of echo cancellation activity and echo energy during the communication connection between the first local user device and the remote user device; and

20           (g) when the detected at least one of echo cancellation activity and echo energy is above a determined threshold, again performing echo cancellation on the communication connection.

2. (Currently Amended) The method claimed in Claim 1, ~~wherein:~~

~~said first external transmission medium includes a trunk~~ wherein the again performing step (f) is performed and further comprising:

5        thereafter monitoring the first external transmission medium for at least one of echo cancellation activity and echo energy during the communication connection between the first local user device and the remote user device; and

when the detected at least one of echo cancellation activity and echo energy falls below a determined threshold, again discontinuing echo cancellation on the communication connection.

3.        (Currently Amended) The method claimed in Claim [[2]]1, wherein:

~~said first local user device includes a telephone unit connected to said switching center via a local loop~~ in the discontinuing step, the at least one of echo cancellation activity and echo energy is echo cancellation activity.

4.        (Currently Amended) The method claimed in Claim [[3]]1, wherein:

said first external transmission medium includes a trunk;

wherein:

5        said first local user device includes a telephone unit connected to said switching center via a local loop; and wherein:

said step of coupling includes providing a communication path between said telephone unit and said trunk.

5.        (Previously Presented) The method claimed in Claim 1, wherein:

said step of monitoring includes receiving a signal from said first local user device indicating that echoes are being audibly perceived by a user thereof.

6.        (Previously Presented) The method claimed in Claim 1, wherein:

5        the at least one of echo cancellation activity and echo energy is echo energy and said step of monitoring includes allocating a call classifier to said communication connection and receiving an indication from said call classifier that echoes above a predetermined power level are being received from said first external transmission medium.

7. (Previously Presented) The method claimed in Claim 1, wherein:

the at least one of echo cancellation activity and echo energy is echo cancellation activity and said step of monitoring includes assigning an echo cancellation unit to said communication connection and receiving an indication from said echo cancellation unit that  
5 echoes above a predetermined power level are being received from said first external transmission medium; and

said step of allocating includes allowing said echo cancellation unit to continue performing echo cancellation for said communication connection for the duration thereof.

8. (Original) The method claimed in Claim 1, wherein:

said pool of echo cancellation units includes at least one multi-channel hardware echo cancellation device.

9. (Original) The method claimed in Claim 1, wherein:

said pool of echo cancellation units includes a programmable digital processing device.

10. (Previously Presented) The method Claimed in Claim 6, when the detected at least one of echo cancellation activity and echo energy fails to exceed the determined threshold within a predetermined time interval after allocating the call classifier, the call classifier terminates the monitoring step.

11. (Currently Amended) A switching center for use within a communication network, comprising:

a plurality of first ports for use in coupling the switching center to a plurality of local user devices;

5 a plurality of second ports for use in coupling the switching center to a plurality of external transmission media, each of said plurality of external transmission media being coupled at an opposite end to another switching center within the communication network;

a switch for selectively coupling individual first ports to individual second ports within the switching center for use in establishing communication connections between local  
10 user devices and remote user devices in the communication network;

a pool of echo cancellation units that are each capable of reducing echoes received by said switching center from an external transmission medium; and

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an allocation unit for allocating an echo cancellation unit from said pool of echo cancellation units to a first communication connection being supported by the switching  
15 center in response to detection of echo energy above a threshold level from an external transmission medium associated with said communication connection and thereafter terminating allocation of the echo cancellation unit to the first communication connection in response to detection of echo energy below the threshold level, wherein a first local user device is coupled to a first external transmission medium as part of the first communication  
20 connection between the first local user device and a remote user device, wherein the allocating and terminating operations are performed with respect to the first communication connection, and wherein the allocation unit is further operable to thereafter monitor the first communication connection, while the first local user device and remote user device are coupled to the first external transmission medium, for at least one of echo cancellation  
25 activity and echo energy and reallocate an echo cancellation unit from said pool of echo cancellation units to the first communication connection in response to detection of echo energy above a threshold level.

12. (Currently Amended) The switching center of Claim 11, ~~wherein:~~

~~said plurality of external transmission media include a plurality of~~wherein the allocation unit is further operable to thereafter monitor the first communication connection, while the first local user device and remote user device are coupled to the first external  
5 transmission medium, for at least one of echo cancellation activity and echo energy and

discontinue reallocation of the echo cancellation unit to the first communication connection in response to detection of echo energy below a threshold level.

13. (Original) The switching center of Claim 11, wherein:  
said communication network includes a conventional telephony network.

14. (Original) The switching center of Claim 11, wherein:  
said pool of echo cancellation units includes a plurality of individual hardware units.

15. (Original) The switching center of Claim 11, wherein:  
said allocation unit includes at least one call classifier for detecting echoes associated with a communication connection.

16-20. (Canceled)

21. (Currently Amended) A method for performing echo cancellation within a switching center of a communication network, said switching center being coupled to a plurality of local user devices and a plurality of external transmission media, said method comprising the steps of:

5 providing at least one echo cancellation unit within said switching center;  
coupling a first local user device to a first external transmission medium as part of a communication connection between the first local user device and a remote user device;  
in response to at least one of echo cancellation activity and echo energy on the first  
external transmission medium rising to a level that is unacceptable during the communication  
10 connection between the first local user device and a remote user device, performing echo cancellation ~~with the at least one echo cancellation unit~~ on the communication connection;  
thereafter monitoring the first external transmission medium for at least one of echo cancellation activity and echo energy; [[and]]

15        ~~when in response to~~ the detected at least one of echo cancellation activity and echo energy thereafter ~~falls below the determined threshold~~ falling to a level that is acceptable during the communication connection between the first local user device and a remote user device, discontinuing echo cancellation of signals on the first external transmission medium; and

20        in response to at least one of echo cancellation activity and echo energy on the first external transmission medium again rising to a level that is unacceptable during the communication connection between the first local user device and a remote user device, again performing echo cancellation on the communication connection.

22.        (Currently Amended) The method of Claim 21, further comprising:

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5        ~~when the at least one of echo cancellation activity and echo energy is above a determined threshold, the allocating step is performed~~ in response to at least one of echo cancellation activity and echo energy on the first external transmission medium again falling to a level that is acceptable during the communication connection between the first local user device and a remote user device, again discontinuing echo cancellation of signals on the communication connection.

23.        (Previously Presented) The method claimed in Claim 21, wherein the at least one echo cancellation unit is a pool of echo cancellation units and further comprising:

allocating a first echo cancellation unit from the pool to the communication connection.

24.        (Currently Amended) The method claimed in Claim 23, wherein:

~~said first local user device includes a telephone unit connected to said switching center via a local loop; and~~

5        ~~said first external transmission medium includes a trunk~~ in the discontinuing step, echo cancellation is discontinued when the detected echo cancellation activity falls below the determined threshold.

25. (Previously Presented) The method claimed in Claim 24, wherein:  
said step of coupling includes providing a communication path between said telephone unit and said trunk.

26. (Previously Presented) The method claimed in Claim 23, wherein said allocating step is performed in response to the receipt of a signal from said first local user device indicating that echoes are being audibly perceived by a user thereof.

27. (Previously Presented) The method claimed in Claim 21, wherein:  
the at least one of echo cancellation activity and echo energy is echo energy and said step of monitoring includes allocating a call classifier to said communication connection and receiving an indication from said call classifier that echoes above a predetermined power level are being received from said first external transmission medium.

28. (Previously Presented) The method claimed in Claim 21, wherein:  
the at least one of echo cancellation activity and echo energy is echo cancellation activity and said step of monitoring includes receiving an indication from said at least one echo cancellation unit that echoes above a predetermined power level are being received from said first external transmission medium.

29. (Previously Presented) The method claimed in Claim 28, wherein:  
said pool of echo cancellation units includes at least one multi-channel hardware echo cancellation device ; and  
said step of allocating includes allowing said at least one echo cancellation unit to continue performing echo cancellation for said communication connection for the duration thereof.

30. (Previously Presented) The method claimed in Claim 23, wherein:

said pool of echo cancellation units includes a programmable digital processing device.

31. (Previously Presented) The method claimed in Claim 27, when the detected at least one of echo cancellation activity and echo energy fails to exceed the determined threshold within a predetermined time interval after allocating the call classifier, the call classifier terminates the monitoring step.

B [ Please add the following new Claims 32-34. ]

32. (New) The method of claim 1, wherein the at least one of echo cancellation activity and echo energy includes both echo cancellation activity and echo energy.

33. (New) The switching center of claim 11, wherein the at least one of echo cancellation activity and echo energy includes both echo cancellation activity and echo energy.

34. (New) The method of claim 21, wherein the at least one of echo cancellation activity and echo energy includes both echo cancellation activity and echo energy.